

USER'S GUIDE TO THE STATISTICAL DATABASE

Table of contents

1. Introduction	2
1.1 Content and main functions	2
1.2 Homepage	3
1.3 Static version (PDF) and dynamic (online navigable) version	
1.4 Standards for database updating	4
2. Data organization and methodology	5
2.1 The model	5
2.2 Unit of measure and reference date	6
3. Display of data and metadata	7
3.1 Contents or Taxonomy	7
3.2 Display	7
3.2.1 Display of metadata	8
3.2.2 Display in multidimensional format	g
3.2.3 Display as time series table	10
3.3 Data filters	11
3.4 Multiple displays for time series: adding to the view	12
4. Searching for information	13
4.1 Textual search (full-text and key-search)	13
4.2 Structured search (search options)	14
5. Exporting data and metadata	17
5.1 Exporting data and Report	17
5.2 Exporting data with A2A services	19
6. The personalization of the workspace (MySpace)	22
6.1 User registration	22
6.2 MySpace: access and operations available	24
6.2.1 Saving a list in MySpace	25
6.2.2 Saving a report in MySpace	26
6.2.3 Creating a personalized list of contents	27

1. Introduction

1.1 Content and main functions

The Bank of Italy Statistical Database contains the data found in the periodical publications of the *Statistics Series*¹ plus some historical time series of macroeconomic statistics and the International Monetary Fund's Statistical Data Dissemination Standard indicators. For the publications, the database contains both the static version in PDF format and a dynamic, navigable version.

Access is free with no need for authentication, by means of an Inquiry application posted on the Bank of Italy website at https://infostat.bancaditalia.it/inquiry/. This gives you interactive use of the database with these functions:

- VIEW in multidimensional tables, time series or graphs;
- CONSULT metadata;
- FILTER for relevant data;
- SEARCH: hierarchical, text, key-search;
- EXPORT selected data (download in various formats);
- PERSONALIZE screen views and work environment.

To access the new platform, it is not necessary to install Flash Player, but one of the following browsers is needed: Chrome 60+, Opera 45+, Firefox 57+, Microsoft Edge, IE 11+, Safari 11+.

The statistics are structured hierarchically (contents), by "Topics", i.e. by the document in which the data are published (individual issues of the *Statistics Series*). A selection of the most prominent statistics is under "Main indicators".

Data are presented in pre-set, multidimensional tables or by time series. You can always generate personalized screen views to suit your own needs.

Contents and structure are described in an ample set of metadata, making it easier to understand the statistics and search for the data needed.

This User's Guide describes how the data are organized and specifies the characteristics of each function, while also suggesting how to use the application more efficiently (see the "NOTICE" sections).

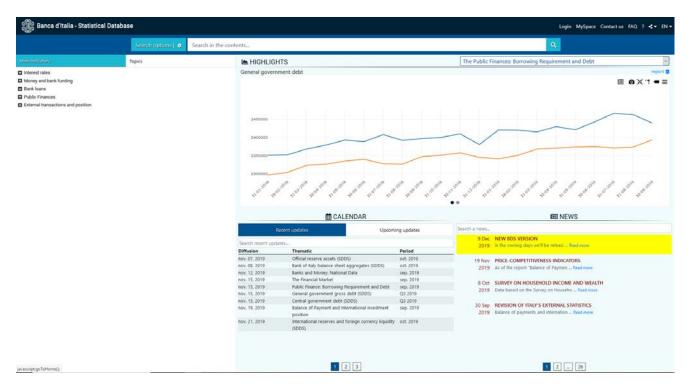
In addition to the desktop version described in this Guide, we have also developed a version of the database for mobile devices, available at https://infostat.bancaditalia.it/inquiry/lite/ which can be accessed with the latest and most commonly used browsers (i.e. Internet Explorer v9, Firefox 4, Chrome, Safari 5.1, Opera 11.5 and subsequent versions).

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¹ Except for some sample survey.

1.2 Homepage

The homepage looks like this:



The dark bar remains on-screen throughout navigation, with these functions:

- Login: link for authentication;
- MySpace: for personalization and saving of favorites (Chapter 6);
- Contact us: e-mail for clarification on data;
- FAQ: a new window with a list of the questions asked most frequently by Statistical Database users;
- : access to the user's guide and video tutorials;
- share page contents;
- EN: language switch.

Top center of the screen, you can find the Text Search bar and "search options" key (Chapter 4).

On the left, the indexes for a selection of the relevant information ("<u>Main indicators</u>") and the full database contents ("<u>Topics</u>").

The "<u>Highlights</u>" frame displays the graphs of the main publications with a direct link to the corresponding data in report form on the statistics in which users are most interested. You can select the publication from the top menu, and scroll through the graphs by using the scroll buttons at the bottom of the graph.

"Calendar" shows the recent updates and the upcoming release dates.

[&]quot;News" shows the latest news and relevant information to users.

1.3 Static version (PDF) versus dynamic (online navigable) version

For the same publication, the content of the online version is more extensive than the PDF, with more tables and a finer level of detail. Accordingly, the presentation of the database tables does not always correspond to that in the publication. All the methodological or contingent notes found in the publication are also present in the online database, as Notes to the online edition, publication, table, column, or observations.

1.4 Standards for database updating

Data are released according to a set calendar, available at Statistics -> Statistics Release Schedule.

When data are released for a new period, some of the data for previous periods are refreshed to incorporate any corrections in the database. The PDF version remains unchanged.

With respect to the tables published in "Banks and financial institutions: branch network", "Banks and Financial Institutions: Credit Conditions and Risk by Sector and Geographical Area" and "Banks and Financial Institutions: Financing and Funding by Sector and Geographical Area", refreshes for periods already released differ according to the source and frequency of the table:

- Data with source "Supervisory reports": one year before
- Data with source "Analytical survey on lending and deposit rates": one quarter before

In the *Statistics Series*, as a rule, the content of the dynamic database is aligned with the PDF publications, but there may be exceptions, as when we decide to publish a set of time series or tables before the official PDF release date. The different refresh dates are given in the info frame.

For sections "Tables no longer updated" and "Historical tables" no more data feeds are foreseen, hence no refreshes.

NOTICE: By reason of these refreshes, the data on previous periods can differ from those released earlier and from those in the PDF. For the same reason, data for the same subject but in different publications, with different release frequencies, may differ, owing to the different data-generation dates.

2. Data organization and methodology

2.1 The model

There are three types of content:

- Quantitative data;
- Metadata: qualitative information (codes and descriptions) describing and explaining the quantitative data. Metadata may be for a single table, a series, or a domain;
- Documents: for statistics from a publication, you can access the PDF document directly through the inquiry application; the data are accompanied by graphs.

Methodologically, all the data are represented in a multidimensional model, whose elementary structure, called "cube," contains all the information needed to represent a subject and is unequivocally identified by a key shown in the list of contents, corresponding to the last element of each node (see below) or at the top in the Data window (Chapter 3). The general structure of the "cube" consists of:

- the subject (e.g. loans);
- the classification variables (e.g. customer's economic activity), specifying characteristics, each
 of which is associated with a set of admissible values within all those of the domain, called
 "Domain in use";
- measurement variables (amount, rate, index number, etc.) for the subject (e.g. number of bank branches). In one-measure cubes, the measure has no specific name, as it is unique. In multimeasure cubes, each measure carries its own name;
- the attributes of the measure (e.g. if it is percentage or an amount expressed in a particular scale).

For multidimensional tables, every cube usually has these columns:

- subject;
- date of observation;
- reporting entity;
- value.

There are almost always "classification variables" as well.

<u>Time series</u> are characterized by the time dimension only; the set of classification variables (among which is the subject or economic phenomenon) is collapsed in the series identification (the multi-dimensional key).

2.2 Unit of measure and reference date

The data related to values are in euros; the Historical Tables are in Italian Lira.

By convention, the reference date is the last day of the observation period, both for stocks and for flows (monthly data are at the last day of the month, yearly data at 31 December). In some cases, they are averages for the period.

3. Display of data and metadata

3.1 Contents or Taxonomy

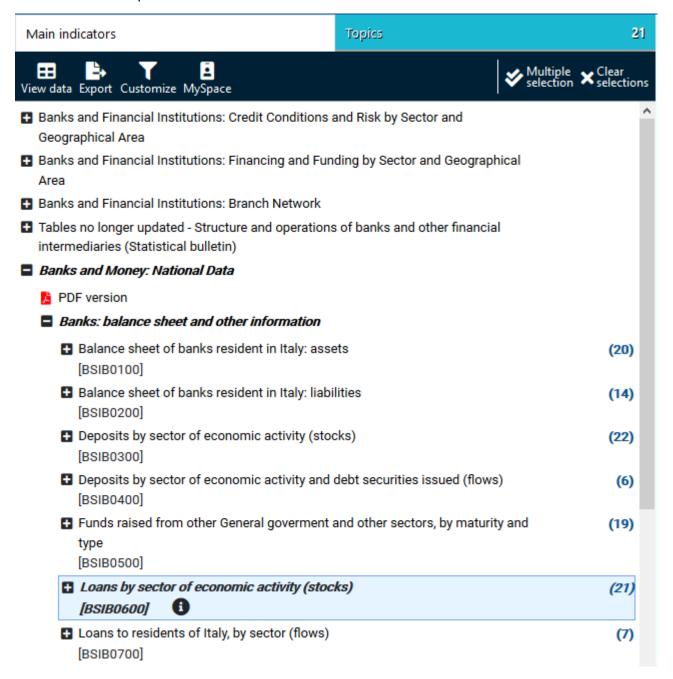
The statistics are structured in a hierarchical tree, by "Topic" (the document in which the data are released).

Every branch of the tree opens in various nodes. The number in brackets is the number of cubes or time series associated with the table.

A selected choice of statistics is offered under the "Main indicators" taxonomy.

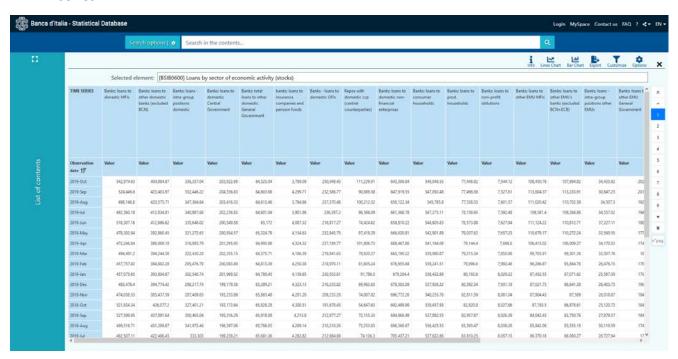
3.2 Display

To display a table's data, click on the name of the table (in contents); a function menu appears on top – click on "show report".



For each table you select, the application has a default display:

- multidimensional tables: rows and columns both have more than one classification variable, whose value is given at every intersection. Default displays the most representative subject (ordinarily, the total for each classification variable).
- Time series tables: rows give the data observed, columns the value for the subject in that
 particular series. The default view is ordered according to the most suitable criterion for the
 series.



Use the scrollbars bottom and right to scroll through the data, and the buttons on the right to view more data vertically. Use Observation date 15 to order ascendingly or descendingly.

Click on Options symbol at the upper right of the data display window to display the codes and/or

descriptions of the subjects of the table. Click on Customize to customize the report shown (see section 3.3 on data filters).

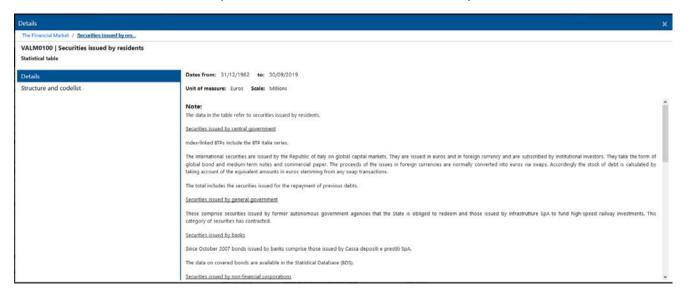
The "X" icon in the top-right corner closes the report, and the blue column on the left returns to the indexes.

3.2.1 Display of metadata

Metadata consist of information on the content and structure of a table. You can access them from the index or after loading the data.

To access from the index, click on the name of a series or table and select "info" from the icon panel opens with:

- general "details" on the subject (name, description, type, any notes, classification variables)
- "structure and codelist", divided into "classification variables", "attributes" and "measures".

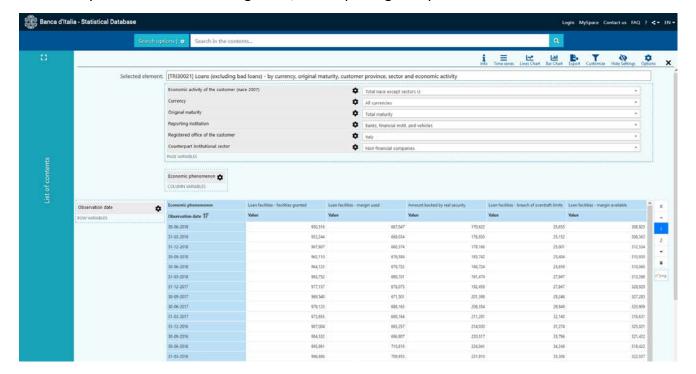


To access the metadata for data already displayed, see below.

3.2.2 Display in multidimensional format

In the multidimensional format, all the variables in the selected cubes are available. They are divided into row or column variables (in our example, "Observation date" and "Economic phenomenon") and

page variables (in the example, all the others). When displayed as time series Time series, the system dynamically creates the description/code of the series: the first element in the code is the subject, followed by the others in increasing order, with reporting entity as the last element.



For each variable, click on to see the list of occurrences; by clicking on vou can move the variables to row, column or page. You can also drag and drop the elements of the table, clicking on the variable's label and dragging it to the new position. Using all these functions, you can personalize the view.

Use the scroll bars bottom and right to scroll the page, and the buttons on the right to change page.

The top menu shows the available functions:



- Info: see details;
- Time series: view as time series;
- Lines chart: make a line plot;
- Bar chart: make a bar chart;
- Pie chart: make a pie chart;
- Export: export data and metadata (Chapter 5);
- Customize: personalize data selection and view options (see section 3.3);
- Hide/Show settings: hides or shows structural variables
- Options: view codes, descriptions or both (default is descriptions only).

NOTICE: There may be combinations of data for which there is no observed value; the description then is "no data for this filter combination".

3.2.3 Display as time series table

For time series tables, each column specifies a different series while each row shows the values for a different date.

Scroll rows and columns, using the scrollbars at the right or bottom, and buttons on the right to change page.

To view the metadata of a series, run the mouse over the head of a column. This opens a small information panel with the code of the series constructed as key of decoded variables.

The top menu shows the available functions:



- Info: show details;
- Lines Chart: make a line plot;

- Bar Chart: make a bar chart;
- Pie chart: make a pie chart;
- Export: export data and metadata (Chapter 5);
- Customize: personalize data selection and view options (see section 3.3);
- Options: view codes, descriptions or both (default is descriptions only).

3.3 Data filters

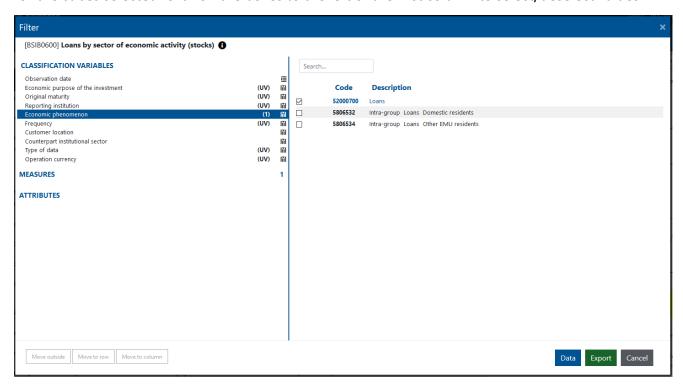
You can personalize the display of a table using the filters to select only a specific subset of data.

Click on "Customize" to open a panel showing the different options: you can select single values or sets of values of the classification variables (dates included), measures and attributes.

For multidimensional cubes, the filter places on the work screen only the interval of values you have selected — which can then be used to personalize the views (see 3.4) — and allows you to apply the criteria simultaneously for shifts to row and to column in the view produced by the various applications of the filter.

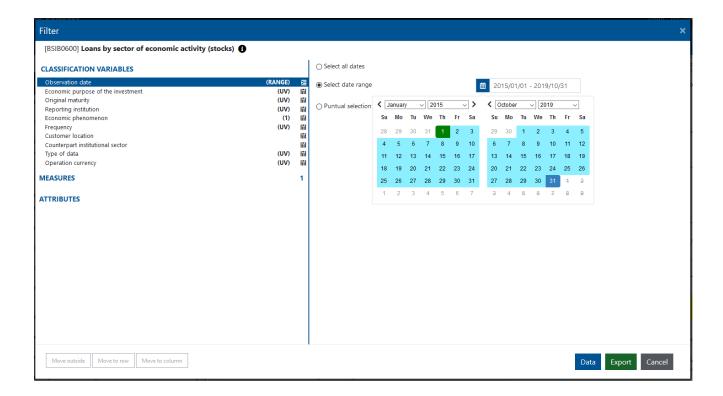
For time series, the variable filter restricts the number of series displayed; the "date" filter reduces the number of rows shown.

If you select one of the variables on the left, the little table to the right shows the values of the variable for the cubes selected. Click on the boxes to the left of the first column to select/deselect values.



You can limit the interval of dates through the variable "Observation date", either by using the calendar or by selecting the specific dates you want.

Once you have activated the desired filters, click on "Data" to recalculate the data previously displayed with filters applied.



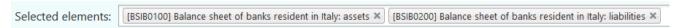
NOTICE: To cancel filters, you need to click on the checkbox for each element.

3.4 Multiple displays for time series: adding to the view

You can view time series (also multidimensional data, but in the time-series display mode) from different tables jointly, detaching them from the structure of existing tables and aligning them on the screen.

To view more than one time series/table, once one has been selected, activate "Multiple selection" from the top menu, then select the other desired series/tables, which will remain highlighted (click again to un-select).

In the data view, next to "Selected elements", codes and descriptions of selected elements (series or tables) will be shown, and can be removed by clicking on the "X" icon.



NOTICE: On your personalized views you can perform the same set of operations as on predefined tables (Customize, Export, Line, bar or pie chart, and Options).

4. Searching for information

The various search methods available (hierarchical, textual, structured and key-search) are listed and described in detail in the following sections of this chapter.

The scope of textual research is extended by default to: descriptions, classification variables, domain elements and attributes. To narrow the scope of your searches, you can first put in place some filters (see below).

Search results are shown as a subset of the list of contents. For each occurrence of the item, the path is also given.

4.1 Textual search (full-text and key-search)

The data can be identified by inserting one or more keywords in the textual search box at the top of the main frame. The response is a list of the tables containing the keywords searched for.



Type in the desired term or string and click on the magnifying glass (or hit Enter) to carry out the search.

The following logical operators can be used:

- term1 AND term2: items whose descriptions contain both term1 and term2 (by default the logical operator for a sequence of terms for which no logical operators have been specified is AND);
- term1 **OR** term2: items whose descriptions contain either term1 or term2 or both;
- **NOT** *term*: items whose descriptions do not contain *term*;
- you can use round brackets to construct complex expressions: for example, term1 AND (term2 OR term3) will give the items whose descriptions contain term1 and at least one of the two terms term2 and term3.

The words in a string can also contain the following wildcards, which make it possible to specify only a part of the term to be searched:

- * (asterisk): any sequence (including blanks) of characters;
- ? : any (individual) character

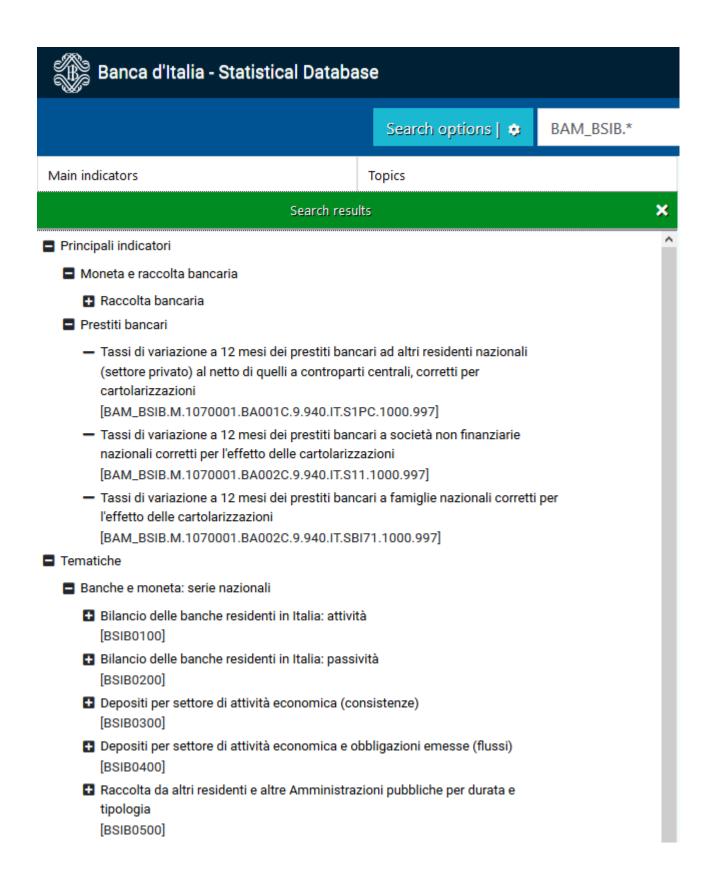
The two wildcards referred to above cannot be inserted at the beginning of a string.

The string can also refer to the single key of a cube: it can be entered as a whole or only in part (using the * and ? wildcards).

Following are some examples of searches using the key-search method.



To carry out another search, click on the "x"symbol on the right of the search box. "Main indicators" and "Topics" will remain available and are accessible by clicking on them without losing the search results.



4.2 Structured search (search options)

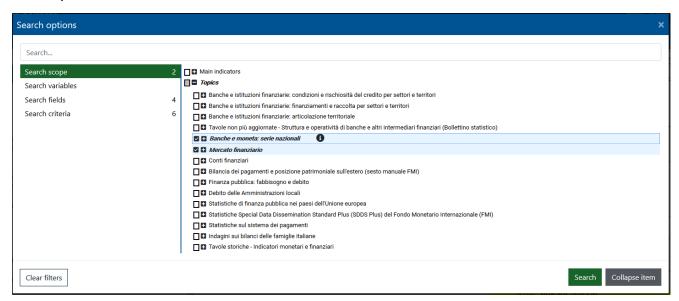
Type the desired word/string in the appropriate field and click on "Search options". A dialogue window opens and allows you to choose between various options. When you have set the filters, click on "Search".

The filters provided are listed on the left of the dialogue window. To access them, click on the corresponding label. It is possible to activate more than one type of filter in the same session. You can see a summary of the active filters by clicking on the label "Search criteria".

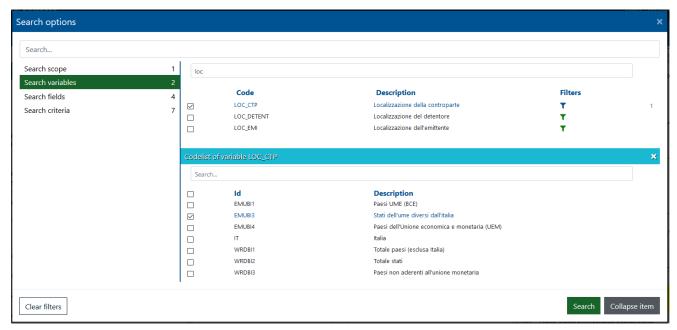
The available filters and their functions are listed below.

• **SEARCH SCOPE**: allows the search to be restricted to a subset of the list of contents, for example a publication, a table, a historical series or one or more economic subjects.

To use this filter, open the list of contents and click on the box to the left of the occurrences you want.



 SEARCH VARIABLES: allows the search to be restricted only to the data that refer to a specific set of variables. To select the variables, run through the list and click on the box on the left.
 The list of displayed variables depends on the filters already activated on the list of contents.



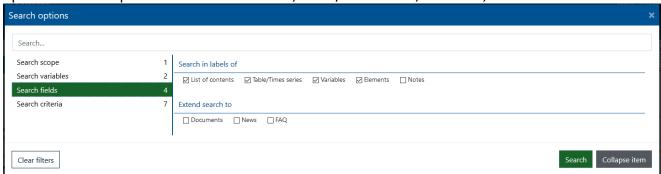
You can search the variables using the buttons or use the search field in the screen.

NOTICE: in order to access the list of variables you need to select at least one node.

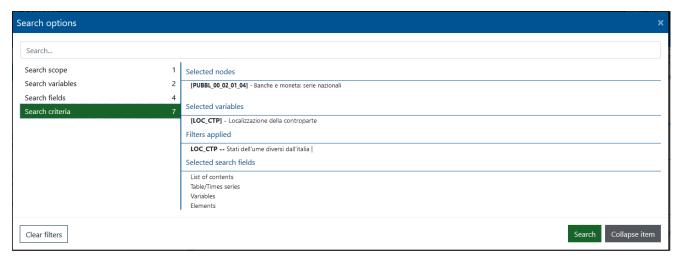
In addition, after choosing the variables, you can also select one or more specific values within the related domains (use domains). After selecting a variable, click in the Filter column. In the lower part of the screen, another table opens, containing the domain elements of the variable of interest. You can click on the box to the left to select the filter value/s.

If you want to clear <u>only</u> the variable filter, you must click on "clear filters" in the bottom <u>left</u>-hand corner.

SEARCH FIELDS: you can choose which metadata to include in your search by selecting the related options. Default options are: List of contents, Table/Time series, Variables, Elements.



NOTICE: Filters remain active until they are explicitly cancelled. Their presence is signaled by the counter beside the "search criteria" key.



5. Exporting data and metadata

The export function allows you to download various types of information onto your PC:

- data (possibly filtered) in the form of a table or a historical series;
- structures: all the information contained in the "info" option (see above);
- domains: the descriptions of the codes used in the view;
- views.

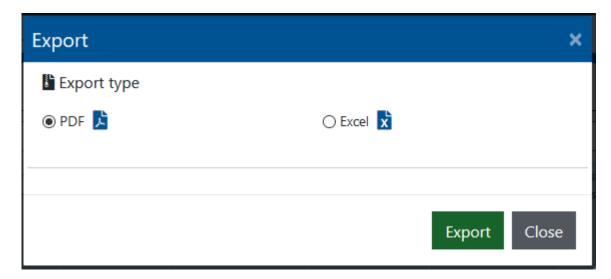
It is also possible to export statistical tables automatically using a service activated by an owned application (see Section 5.2).

5.1 Exporting data and reports

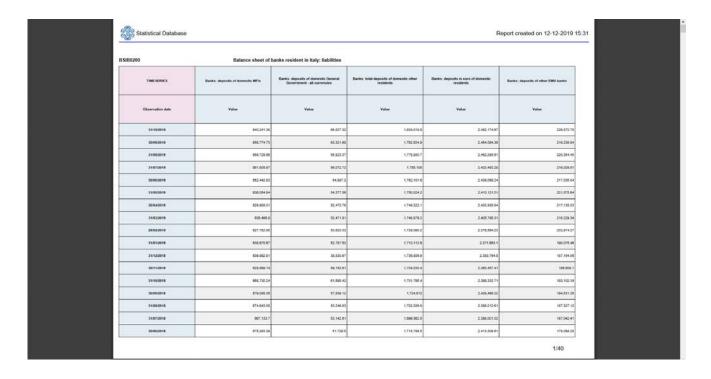
You can activate this function from the "Data" window or from the list of contents. In **the first case**, display the data you are interested in and click on "Export" in the top-right menu.

A dialogue window opens from which you can choose export type: PDF or Excel.

In both cases, by clicking on "Export", the export starts.



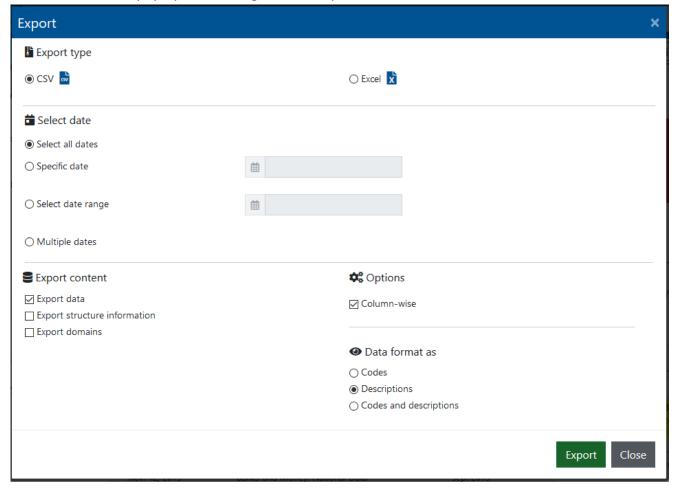
When choosing PDF, a new window displaying the PDF file will automatically appear when the job is done.



When choosing "Excel", once the job is complete, the window to save or open the file will show up.

In the **second case** (exporting from the list of contents), click on the name of a series or table; the function menu will appear and you can click on "Export".

A new window will pop up, containing different options:



- "Export type": choose between CSV and Excel;
- "Select date": choose between "all dates", a range or specific/multiple dates;
- "Export content": data, structure information (info displayed under details in the
 "Structure" tab) and or domains (which includes all possible codes for the variables used);
- "Options": when "Column-wise" is checked, data is exported in columns, otherwise in multidimensional form;
- "Data format": time series and variables are identified by codes, descriptions or both.

Clicking on "Export" activates the procedure, at the end of which the "Save file" window will pop up.

5.2 Exporting data with A2A services

The Statistical Database allows statistical tables (data and metadata) to be exported by activating RESTful services, included by means of an application (in "application to application" – A2A mode). The produced files are compressed (.zip) files.

The service responds to URLs of the following type:

https://a2a.bancaditalia.it/infostat/dataservices/{method}/{local}/{format}/{contenttype}/{objecttype}/{community}/{contextid}/{objectid}

The possible values for the various options are as follows (case sensitive):

- method export
- local IT, EN
- format CSV
- contenttype DATA, LEGEND, DOMAIN, STRUCTURE, ALL (indicate that all 4 types can be downloaded in a single zip file)
- objecttype CUBE, PUBLICATION
- community BANKITALIA
- contextid DIFF
- objectid <name of the statistical table or of the publication (capital letters)>

Using the service, it is possible to download:

- A. a single statistical table
- B. an entire publication:
 - if the content type = DATA a compressed file is downloaded containing a file for each table in the publication;
 - if the content type = LEGEND or METADATA or STRUCTURE a file is downloaded containing the cumulative information for the entire publication.

The content of a publication corresponds, except in special cases, to what is contained in the list of contents inside each main node of the "Topics" hierarchy. The codes to be used are given in the table below.

Publications	Code
Structure and operations of banks and other financial	STABOL
intermediaries (Statistical bulletin) – quarterly	JIABOL
Structure and operations of banks and other financial	STAMEN
intermediaries (Statistical bulletin) – monthly	
Banche e istituzioni finanziarie: condizioni e rischiosità del	STACORIS
credito per settori e territori	317(001(13
Banche e istituzioni finanziarie: finanziamenti e raccolta per	STAFINRA
settori e territori	317111111111
Banks and Financial Institutions: Branch Network	
Banks and Money: National Data	
The Financial Market	
Financial Accounts	
Balance of Payments and International Investment Position	ВОР
Public Finance: Borrowing Requirement and Debt	FPI
Local Government Debt	
Public Finance Statistics in the European Union	FPE
International Monetary Fund's Special Data Dissemination	SDDS
Standard Plus (SDDS Plus) statistics	
Payment system	STASDP
Historical Tables – Monetary and Financial Indicators	SST
Surveys on household income and wealth	IBF
Tables no longer updated	EXSTA

Some examples of calls:

- to download the data (in Italian) of a table you must use the following URL: https://a2a.bancaditalia.it/infostat/dataservices/export/IT/CSV/DATA/CUBE/BANKITALIA/DIFF/TDB20207;
- to download the structural metadata (in English) of a table: https://a2a.bancaditalia.it/infostat/dataservices/export/EN/CSV/STRUCTURE/CUBE/BANKITALIA/DIFF/TDB20207;
- to download the data (in Italian) of a publication: https://a2a.bancaditalia.it/infostat/dataservices/export/IT/CSV/ALL/PUBLICATION/BANKITALIA/DIFF/BOP;
- to download the domain metadata (in English) of a publication:
 https://a2a.bancaditalia.it/infostat/dataservices/export/EN/CSV/DOMAIN/PUBLICATION/BANKI
 TALIA/DIFF/STABOL

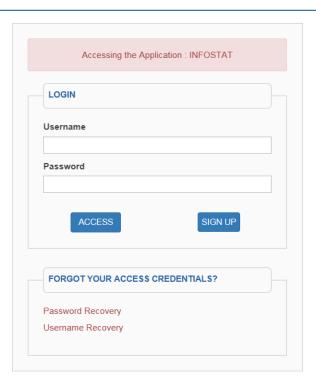
6. The personalization of the workspace (MySpace)

Each user has a working area, MySpace, where it is possible to save "favorite" objects and other personalized content.

To use this area, external users have to be authenticated, i.e. they must access the application by means of a username and password. To obtain these, you must register (see below).

To access MySpace subsequently, after entering the application, click on "Login" in the home page, enter your username and password, and then click on "Access".

Authentication



6.1 User registration

The steps to register are as follows:

1. On the home page of the application, click on "Login".



- 2. Start the registration procedure by clicking on "Sign up".
- 3. A window opens for you to enter a username and a password (the rules for choosing the password are given in the window). The procedure is complete only when you have entered the obligatory items, the security code and declared that you accept the terms and conditions for use of the service.

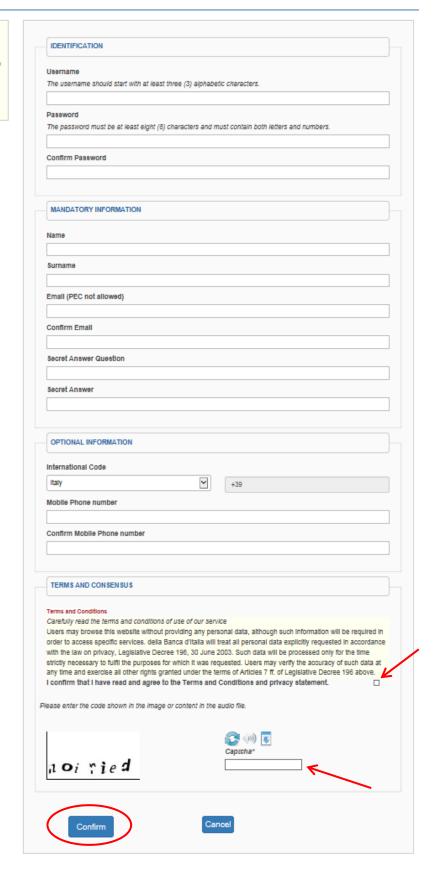
After you have filled all the requested fields, click on "Confirm".

Request new registration

The value entered in the field USERNAI, it along with the password become his credential access. At the end of the registration process, you will be sent an e-mail confirmation to the address indicated. The email will contain a link to a web page for the activation of the user.

Note

The link sent by e-mail will be valid for 72 hours.



4. At the end of the registration procedure, external users are sent an e-mail confirming the address indicated. The e-mail contains a link (valid for 72 hours) to a web page for the activation of the user's authentication.

6.2 MySpace: access and operations available

To access MySpace, click on the corresponding link high on the right of the screen.



A new tab opens, on the left side of the screen.



MySpace can contain:

<u>Current workspace</u>: a temporary space that includes the objects added to MySpace during the current session. During the session you can always view, export or eliminate these objects. If you do not save them in your lists, they are eliminated from the workspace at the end of the session.

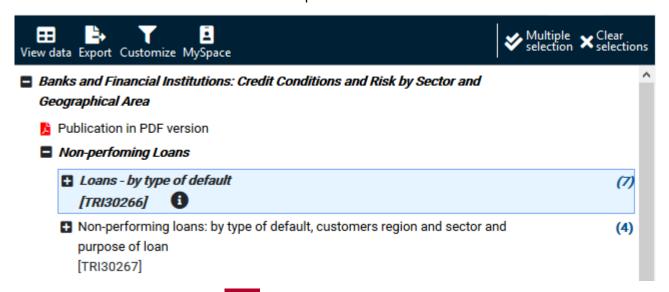
<u>Lists</u>: a part of the chosen list of contents (see below).

My reports: personalized report (see below).

Shared reports: report shared with or by other MySpace users (see below).

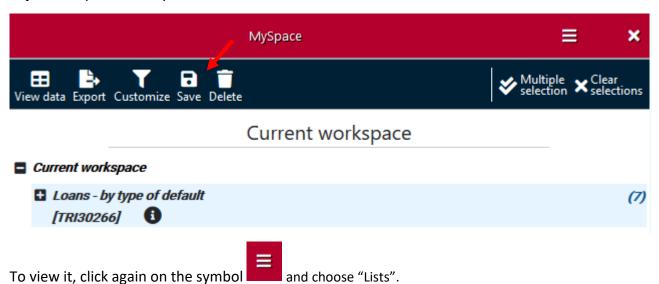
6.2.1 Saving a list in MySpace

Select a table or a single historical series from the list of contents, click on the function "MySpace" on the menu to save it in the "Current workspace".



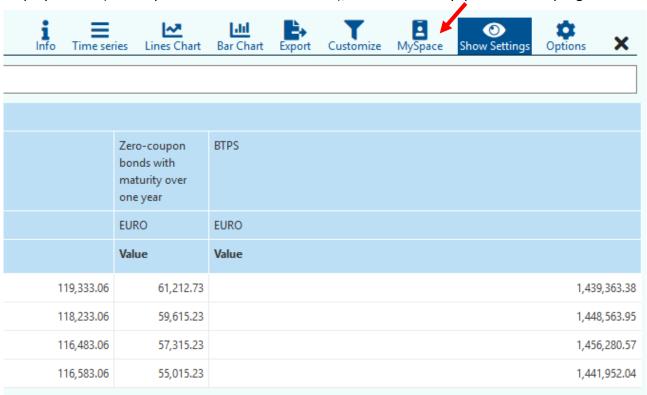
In the MySpace tab, click on the symbol to access the MySpace menu. A counter showing the number of objects in each category is present.

To create a list of objects, open "Current workspace" and choose the objects to be included in the list by clicking on each object, using the "Multiple selection" option when necessary. Then click on "Save". The application will ask you to give the list a name or add to an existing one, after which the objects are permanently saved under the chosen list.



6.2.2 Saving a report in MySpace

Display a table (even if personalized as in 3.4 above), then click on MySpace in the top-right menu.



This opens a dialogue window where you need to enter the name and a brief description of the report to save. Alternatively, you can choose from the existing reports (shared ones are separate), to replace the current report with the new one.



Click on "Save" to memorize the report.

To call up a report you have already saved, access MySpace, click on the symbol, then on "My reports" and select the one you want. The function menu appears:

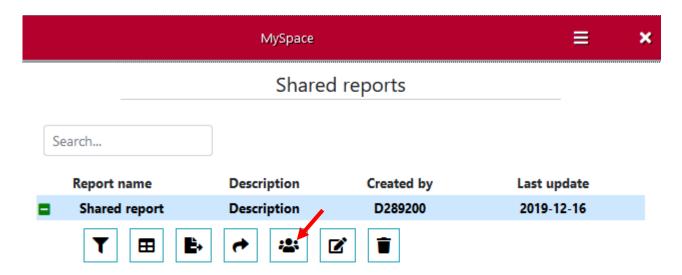
- "filter" to apply additional filters to the report;
- "show report" to display the data according to the settings memorized;
- "export" to export the data;
- "share" to share the report with other MySpace users;

- "modify" to change name and/or description;
- "delete" to delete the report.

After selecting the "share" function, a dialogue window asks you to insert the usernames of the MySpace users with whom you want to share your report. You can choose the access rights to give them:

- "Read only user" it can read but not modify the report;
- "Admin user" it can access all the functions linked to the report.

Click "Share report" to move the report from "My reports" to "Shared reports". From now on, it will appear in the "Shared reports" of the chosen users.



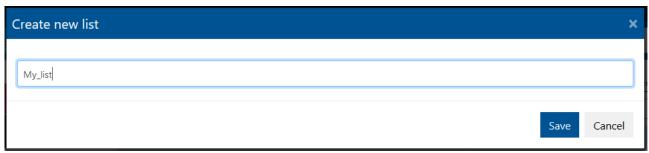
From the "Shared report" function menu, you can access and, if you are administrator, modify the users list, removing some users or changing their access rights.

6.2.3 Creating a personalized list of contents

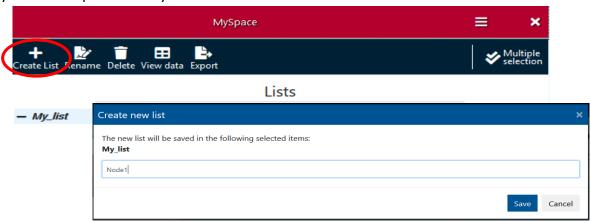
You can select a portion of the list of contents, personalize it and save it in MySpace. This way, you can access your frequently used items directly, without going through the various nodes of the contents or using the search function.

How to create a personalized list of contents in MySpace:

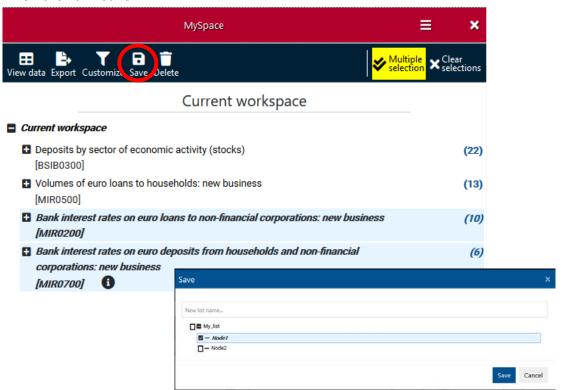
- 1 Select the items you are interested in (publications, tables, single time series) and add them to the current workspace;
- 2 Click on and choose "Lists". Then click on "Create List" at the top of the panel. Give your new list a name (e.g. "My_list") and save. The list acts as a folder: you can create sub-folders that simulate the nodes of the personalized list of contents.



To create sub-folders, click on the new list you have just created and select "Create list". Give it a name (e.g. Node1) and if necessary repeat this operation to create all the sub-folders you need to personalize your contents.



4 Go back to "Current workspace", select one or more items to include in the first sub-folder. Then click on "Save".



This opens a panel displaying all the lists you have. Open up to the node you want (in our example "Node1"). Select the box on the left and click on "Save".

Alternatively, you can create a new list where to save your items.

Repeat steps 4 and 5 to fill the sub-folders with the items you want (views, single series, entire publications, etc.).

In the example, we have created a personalized list of contents with two nodes (sub-folders), in which to insert a selection of tables from *Banks and Money: National Data*. The tables selected are now available directly from "Lists".

